Rec'd PCT/PTO 15 DEC 2004

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



10/518329

(43) International Publication Date 4 December 2003 (04.12.2003)

PCT

(10) International Publication Number WO 03/100978 A1

(51) International Patent Classification7:

(21) International Application Number: PCT/EP02/05722

(22) International Filing Date: 24 May 2002 (24.05.2002)

(25) Filing Language:

English

H03L 7/08

(26) Publication Language:

English

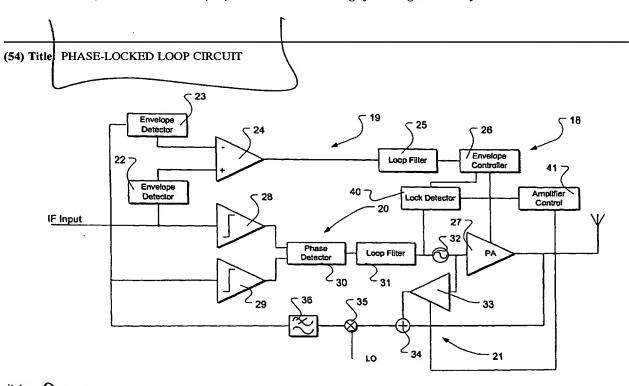
- (71) Applicant (for all designated States except US): NOKIA CORPORATION [FI/FI]; Keilalahdentie 4, FIN-02150 Espoo (FI).
- (71) Applicants and
- (72) Inventors: MIDTGAARD, Jacob [DK/DK]; Vilhelmsro 425, DK-3480 Frederiksberg (DK). BAGGER, Oluf [DK/DK]; Godsbanegade 3, 4th, DK-1722 Copenhagen V (DK).
- (74) Agents: GEARY, Stuart et al.; Venner, Shipley & Co., 20 Little Britain, London EC1A 7DH (GB).

- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



(5) A phase-locked loop circuit has an output amplifier (27) and a main feedback path from the output of the output amplifier (27). A subsidiary feedback path is provided directly from the output of the circuit's VCO (32). At the start of operation, the output amplifier (27) is disabled and the subsidiary feedback path is used until lock is achieved. Then the output amplifier (27) is enabled and the main feedback loop is used. This avoids spurious outputs from the output amplifier while to loop locks.

3/100978 A1